(ii) Emissions more than 135 kHz away from the channel center frequency; at least 43 + 10log(carrier power in watts) dB.

[53 FR 36789, Sept. 22, 1988, as amended at 56 FR 15837, Apr. 18, 1991. Redesignated and amended at 61 FR 28769, 28770, June 6, 1996, and further redesignated and amended at 61 FR 46567, 46568, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, 46568, Sept. 4, 1996, §95.635 was redesignated as §95.637 and new §95.635 was redesignated from §95.633 and amended by adding paragraph (c), effective Oct. 4, 1996.

§95.637 Modulation standards.

(a) A GMRS transmitter that transmits emission types F1D, G1D, or G3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A GMRS transmitter that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 5 kHz. A FRS unit that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 2.5 kHz, and the audio frequency response must not exceed 3.125 kHz .

(b) Each GMRS transmitter, except a mobile station transmitter with a power output of 2.5 W or less, must automatically prevent a greater than normal audio level from causing overmodulation. The transmitter also must include audio frequency low pass filtering, unless it complies with the applicable paragraphs of §95.631 (without filtering.) The filter must be between the modulation limiter and the modulated stage of the transmitter. At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least 60 $\log_{10}$ (f/3) dB greater than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB greater than the attenuation at 1 kHz.

(c) When emission type A3E is transmitted, the modulation must be greater than 85% but must not exceed 100%. Simultaneous amplitude modulation and frequency or phase modulation of a transmitter are not permitted.

(d) When emission type A3E is transmitted by a CB transmitter having a TP of greater than 2.5 W, the CB transmitter must automatically prevent the modulation from exceeding 100%.

(e) Each CB transmitter that transmits emission type H3E, J3E or R3E must be capable of transmitting the upper sideband. The capability of also transmitting the lower sideband is permitted.

[53 FR 36789, Sept. 22, 1988. Redesignated and amended at 61 FR 28769, 28770, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, Sept. 4, 1996, §95.637 was redesignated as §95.639 and new §95.637 was redesignated from §95.635, effective Oct. 4, 1996.

§95.639 Maximum transmitter power.

(a) No GMRS transmitter, under any condition of modulation, shall exceed:

(1) 50 W *Carrier power* (average TP during one unmodulated RF cycle) when transmitting emission type A1D, F1D, G1D, A3E, F3E or G3E.

(2) 50 W peak envelope TP when transmitting emission type H1D, J1D, R1D, H3E, J3E or R3E.

(b) No R/C transmitter, under any condition of modulation, shall exceed a carrier power or peak envelope TP (single-sideband only) of:

(1) 4 W in the 26–27 MHz frequency band, except on channel frequency 27.255 MHz;

(2) 25 W on channel frequency 27.255 MHz;

(3) 0.75 W in the 72–76 MHz frequency band.

(c) No CB transmitter, under any condition of modulation, shall exceed:

(1) 4 W Carrier power when transmitting emission type A1D or A3E;

(2) 12 W peak envelope TP when transmitting emission type H1D, J1D, R1D, H3E, J3E or R3E. Each CB transmitter which transmits emission type H3E, J3E or R3E must automatically prevent the TP from exceeding 12 W peak envelope TP or the manufacturer's rated peak envelope TP, whichever is less.

(d) No FRS unit, under any condition of modulation, shall exceed 0.500 W effective radiated power (ERP).

(e) The maximum transmitter output power authorized for LPRS stations is 100 mW.

[53 FR 36789, Sept. 22, 1988; 53 FR 44144, Nov. 1, 1988. Redesignated and amended at 61 FR 28769, 28770, June 6, 1996, and further redesignated and amended at 61 FR 46567, 46569, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, 46569, Sept. 4, 1996, §95.639 was redesignated from §95.637 and amended by adding paragraph (e), effective Oct. 4, 1996.

TYPE ACCEPTANCE REQUIREMENTS

§95.645 Control accessibility.

(a) No control, switch or other type of adjustment which, when manipulated, can result in a violation of the rules shall be accessible from the transmitter operating panel or from exterior of the transmitter enclosure.

(b) An R/C transmitter which incorporates plug-in frequency determining modules which are changed by the user must be type accepted with the modules. Each module must contain all of the frequency determining circuitry including the oscillator. Plug-in crystals are not considered modules and must not be accessible to the user.

[53 FR 36789, Sept. 22, 1988. Redesignated at 61 FR 28769, June 6, 1996, and further redesignated at 61 FR 46567, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, Sept. 4, 1996, §95.645 was redesignated as §95.647 and new §95.645 was redesignated from §95.643, effective Oct. 4, 1996.

§95.647 FRS unit and R/C transmitter antennas.

The antenna of each FRS unit, and the antenna of each R/C station transmitting in the 72–76 MHz band, must be an integral part of the transmitter. The antenna must have no gain (as compared to a half-wave dipole) and must be vertically polarized.

[61 FR 28770, June 6, 1996. Redesignated at 61 FR 46567, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, Sept. 4, 1996, §95.647 was redesignated as §95.649 and new §95.647 was redesignated from §95.645, effective Oct. 4, 1996.

§95.649 Power capability.

No CB, R/C, LPRS transmitter, or FRS unit shall incorporate provisions for increasing its transmitter power to any level in excess of the limits specified in §95.639.

[61 FR 46569, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, 46569, Sept. 4, 1996, §95.649 was redesignated as §95.651 and new §95.649 was redesignated from §95.647 and revised, effective Oct. 4, 1996. For the convenience of the user, the superseded text is set forth as follows:

§95.649 Power capability.

No CB or R/C station transmitter or FRS unit shall incorporate provisions for increasing its transmitter power to any level in excess of the limit specified in §95.637.

[61 FR 28770, June 6, 1996]

§95.651 Crystal control required.

All transmitters used in the Personal Radio Services must be crystal controlled, except an R/C station that transmits in the 26–27 MHz frequency band, a FRS unit, and a LPRS unit.

[61 FR 46569, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46567, 46569, Sept. 4, 1996, §95.651 was redesignated as §95.653 and new §95.651 was redesignated from §95.649 and revised, effective Oct. 4, 1996. For the convenience of the user, the superseded text is set forth as follows:

§95.651 Crystal control required.

All transmitters used in the Personal Radio Services must be crystal controlled, except an R/C station that transmits in the 26–27 MHz frequency band, and a FRS unit.

[61 FR 28770, June 6, 1996]

§95.653 Instructions and warnings.

(a) A user's instruction manual must be supplied with each transmitter marketed, and one copy (a draft or preliminary copy is acceptable provided a final copy is provided when completed) must be forwarded to the FCC with each request for type acceptance.

(b) The instruction manual must contain all information necessary for the proper installation and operation of the transmitter including:

(1) Instructions concerning all controls, adjustments and switches that may be operated or adjusted without resulting in a violation of the rules.

(2) Warnings concerning any adjustment that could result in a violation of the rules or that is recommended to be performed by or under the immediate